CHAPTER 1 – GENERAL DESIGN CRITERIA

1. This criteria shall apply to all public works, private roads and grading design within the City of Carlsbad which is subject to the review of the City Engineer.

2. All drawings shall be on standard size sheets (24" x 36") with standard City title block. The margin at the 24" right side of the sheet shall be one inch; the balance of the margins shall be one-half inch. All lettering shall be 1/8" or larger with hand lettering, 1/10" or larger for machine lettering. California coordinates shall be computed and included for each plan.

3. All title sheets shall have an index or key map clearly indicating the sheet numbers issued. All index maps shall be drawn showing overall layout of the water, sewer (including required future extensions), storm drain, fire hydrants, and street signing and lighting systems. The Engineer of Work should utilize City Standard sheets, General Notes, and Erosion Control Plans to expedite the plancheck process. These sheets are available at the Engineering counter. They are also available in digital AutoCad data file format.

4. Each sheet is to be signed and sealed by a Registered Civil Engineer. Complex structural, electrical or mechanical installations shall also be signed by the Registered Engineer doing the design. When a soils report is required, plans shall be signed by the Soils Engineer and/or Geologist. In addition, all calculations, plats and reports shall be signed and sealed by the engineer responsible for the design.

5. Revisions made after original approval by the City Engineer shall be initialed by the Engineer of Work and submitted to the City Engineer for approval. Plan revisions must be signed off by the City Engineer or designee prior to construction of the revised improvement.

6. All plans are to be designed and constructed in accordance with this design criteria, San Diego Regional Standard Drawings (SDRSD), Standard Specifications for Public Works Construction (SSPWC), California Department of Transportation Traffic and Highway Design Manuals, applicable AASHTO Design Policies, San Diego County Hydrology Manual, San Diego County Map Processing Manual, City of Carlsbad Technical Guidelines for Geotechnical Reports and City of Carlsbad "Criteria", all latest editions.

7. Profiles shall be shown on the top of sheets. Vertical curves shall show curve length and P.I. elevation, in addition to normal stationing and elevations.

8. Normally, the scales for improvement plans shall be 1" = 40' for the horizontal and 1" = 4' for the vertical. The vertical scale should be changed to 1" = 8' or other appropriate scale where grades are steep. For complex plans, the scale shall be 1" = 20' or larger when necessary for clarity.

9. Improvement and grading plans shall be prepared in indelible ink on mylar drafting film or reproduced by photo mylar (sepia, ammonia mylar or vellum are unacceptable) unless otherwise approved by the City Engineer. Additionally, digital copies of the plans shall be submitted per the City of Carlsbad "Standards for the Digital Submittal of Maps and Plans" available at the Engineering counter and attached herewith in Chapter 2.

10. Public easements shall be a minimum of 15' in width for single facilities, 30’ in width for two facilities unless a lesser width is specifically authorized by the City Engineer. Approved means of all weather access to the easement must be provided. Utility and drainage easements parallel to side lot lines shall be laid out so that the easement is all on one lot. Easements between existing and/or future dwelling units or building structures shall be a minimum of 20' in width for single facilities.

11. Drainage calculations and maps shall accompany all plans submitted for checking, unless the requirement is specifically waived.

12. All plans, calculations and reports are to be checked by the Engineer of Work (EOW) for consistency, accuracy, clarity and conformity with City Standard Specifications, drawings, and design criteria before submission for City review and approval. The EOW is responsible for coordinating plans with their clients Landscape Architect, utility companies and permitting agencies.

13. All plans, calculations and reports submitted for checking shall be accompanied by a letter of transmittal, submittal checklist, and all applicable fees based on the Engineer's Estimate of quantities and costs.

14. The original check prints shall accompany revised plans resubmitted for checking.

15. Original drawings shall become the property of the City upon being signed by the City Engineer.

16. The original drawing shall be revised to reflect as-built conditions by the Engineer of Work prior to final acceptance of the work by the City.

17. The Engineer of Work shall submit maps of any proposed subdivision, drawn to a scale 1" = 500', prior to City approval of the final subdivision map. These maps will be used to update City of Carlsbad Fire Department run books.

18. The number of sheets submitted should normally be limited to that required for clarity of presentation. Separate drawings for streets, water, storm drains, and sewers will not normally be accepted.

19. Improvement plans shall show all existing trees within the street parkway and within 5' outside the right-of-way and specifically designate those to be removed. Any tree within the right-of-way to be removed must have specific approval to do so by the City Engineer.

20. All plans, specifications, and supporting documents shall be signed and sealed by the Engineer in responsible charge of the work prior to City Engineer's approval. Each sheet shall be signed and sealed, except that bound documents may be signed and sealed on their first page. Additionally, the first sheet of each set of plans shall have the following certificate:

"DECLARATION OF RESPONSIBLE CHARGE"

I hereby declare that I am the Engineer of Work for this project, that I have exercised responsible charge of the design of the project as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with current standards.

I understand that the check of project drawings and specifications by the City of Carlsbad does not relieve me, as Engineer of Work, of my responsibilities for project design.

(Name, Address and Telephone of Engineering firm)

Firm: _____

Address: _____

City, State: _____

Telephone: _____

By: _____
(Name of Engineer)

Date: _____

R.C.E. #: _____

Registration Expiration Date: _____

21. After City Engineer's approval of a set of plans, if a new engineer assumes responsible charge of the work, he shall add, sign and seal the following statement in each sheet:

"ASSUMPTION OF RESPONSIBLE CHARGE"

As of _____, I hereby assume responsible charge for design changes to this drawing.

_____ RCE#_____ Exp. _____
(Name)

Firm:_____

Address:_____

Telephone:_____

TABLE A
CITY OF CARLSBAD
STREET DESIGN CRITERIA

DESIGN CLASSIFICATION	PRIME ARTERIAL	MAJOR ARTERIAL	SECONDARY ARTERIAL	COLLECTOR STREET	INDUSTRIAL STREET	LOCAL STREET	CUL-DE-SAC STREET	ALLEY	HILLSIDE STREET
ANTICIPATED ADT RANGES	40,000 OR MORE	20,000 TO 40,000	10,000 TO 20,000	2,000 TO 10,000	----	20 TO 2,000	20 TO 1000	----	----
Design Speed	60 MPH	50 MPH	40 MPH	30 MPH	30 MPH	25 MPH	25 MPH	----	20 MPH
Minimum Spacing of Intersections (including right-turn in/out) (in feet)	2,600	1,200	600	300	300	150 T's others 200	150 T's others 200	----	150
Right-of-Way Width (in feet)	126	102	84	60 or 68	72	60	56	24	46-56
Private Access to Adjoining Property	None	None	Where no other access is possible	Limited subject to approval	Limited subject to approval	O.K.	O.K.	O.K.	Limited subject to approval
Curb-to-Curb Distance (in feet)	106 (18' median)	82 (18' median)	64	40 or 48	52	34	36	24	34
Minimum Traffic Index	9	8.5	8.0	6.0	7.0	5.0	4.5	4.0	5.0
Minimum Structural Section (in inches) [6]	6 AC 6 AB	5 AC 6 AB	4 AC 6 AB	4 AC 6 AB	4 AC 6 AB	4 AC 4 AB	4 AC 4 AB	5-1/2" PCC [8]	4 AC 4 AB
Stopping Sight Distance [5] (in feet)	580	430	300	200	200	150	150	----	125[2]
Corner Sight Distance [9] (in feet)	660	550	440	330	330	275	275	----	220
Minimum Centerline Radius (in feet)	2,400 [6]	1,400 [6]	670	300	300	200	200	----	200
Maximum Centerline Grade (not thru intersec.)[4]	7%	7%	10%	12%[3]	8%	12%	12%	----	15%
Minimum Flowline Grade	1.0%	1.0%	1.0%`	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

NOTES:

(1) N.A.

(2) Reduction to 100' with approval of City Engineer.

(3) Grades greater than 10% will require specific approval, chip seal, etc.

(4) Not to exceed 6% thru intersections. Local, cul-de-sac and hillside may increase grade through intersections up to 8%, provided that CALTRANS guidelines for sight distance and vertical curves are complied with.

(5) Stopping Sight Distance per CALTRANS Highway Design Manual Topic 201 and Volume 3 Section 8 in Chapter 3 of City Standards.

(6) Assumes no superelevations; includes standard crossfall.

(7) Minimum grade of 2.0% is encouraged. If 1.0% minimum is not possible, special construction may be used with City Engineer approval. Gutter line of cul-de-sac bulbs and knuckles shall have minimum grade of 1.0%. Typical centerline grades at the upper reach of cul-de-sacs shall be 2% minimum.

(8) Alley sections shall conform to SDRSD G-21.

(9) Corner Sight Distance per Caltrans Highway Design manual Topic 405 and Volume 3 Section 8 in Chapter 3 of City Standards.